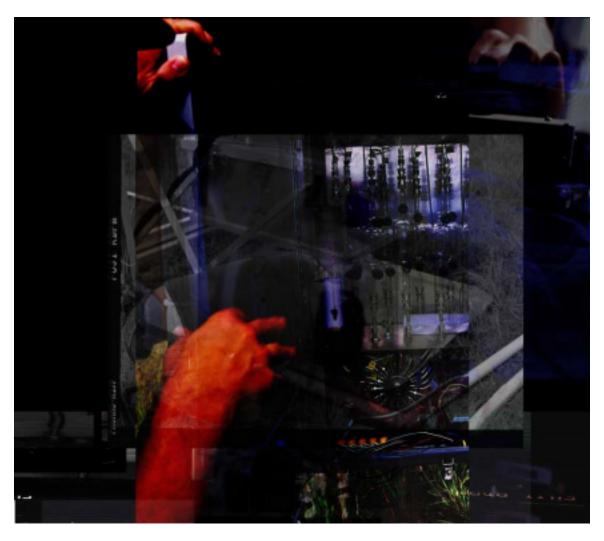# YLEM Journal

## Artists Using Science & Technology

number **6** volume **24** May - June **2004**

## Multi Media



Christina McPhee, Sonic Topos 5 *"The Hands of Climatologist Dr. Jay Ham"*

This issue of the YLEM Journal features an interview with Shirley Shor and an article by Christina McPhee, two artists featured in a show entitled "Recombinant Flux," a group exhibition featuring recent work by nine artists. The artists participating in the show are:

Scott Draves: generative web-based digital images www.draves.org

Marie-Jose Durquet: re-photographed imagery

Josh Feldman: digital painting/design  www.joshfeldman.com

Alice Kelley: fractals www.fractalus.com/cheshirecat/

Christina McPhee: generative digital photographs based on carbon flux data www.christinamcphee.net

Loren Means: paint on film www.halonine.com/loren

Aaron Ross: digital imagery www.dr-yo.com

Shirley Shor: "generative architecture" shirley.friskit.com/

Daniel Shulman-Means: digital organics www.halonine.com/organics

Several of these artists are familiar to readers of the YLEM Journal. Scott Draves had articles in the May-June 2000 and May-June 2003 issues of the Journal. Alice Kelley wrote the cover article for the March-April 2000 issue. Daniel Shulman-Means had images published in the Journal when, as a teenager, he was YLEM's youngest member.

Exhibited in "Recombinant Flux" are works in a variety of media — from photography, film, and video to digital painting and algorithmic software or "code-art." All of the artists engage in the active interrogation and reconfiguration of media considerations, each embracing their materials in a personal and dynamic way. Here the recombinant characteristics of media are celebrated along with the sensibilities and talents of nine individual artists.

I discovered RX Gallery when it played host to Dorkbot, an international organization that presents "people doing interesting things with electricity." The Dorkbot presentations in San Francisco are made manifest by Karen Marcelo, an artificial intelligence programmer who has worked at Xerox PARC. I attended my first Dorkbot in April, 2004, to catch presentations by Rudy Rucker, who in addition to being an eminent science fiction writer whom I had just interviewed for an upcoming issue of the YLEM Journal, is a pioneer in the exploration of cellular automata, and Scott Draves, who acknowledges Rucker's influence. I showed the short movie that I had screened the previous January at the YLEM Forum on "Aspects of Generative Art", and I was thrilled when Rudy Rucker asked me questions about the film, and at its end said, "You don't need a computer after all!" (There are pictures of me looking up appreciatively at Draves and Rucker at http://dorkbot.org/dorkbotsf/). RX Gallery turned out to be a combination art gallery, wine bar, and multi-media center, with a full component of projection equipment, computer monitors, light boxes, and all sorts of high-tech paraphernalia that I'd never seen at an art gallery before. At this presentation I met William Linn, a curator at the gallery, and we began talking about how artists are approaching media and technology today. Here are some statements that Linn made in emails to me:

"A general assumption can be made which applies to all these artists, in that the work is either created or informed by new technologies and seem to possess a similar recombinant aesthetic. I see your work as a fusion of painting, light and photography. The same could be said of Marie-Jose's work. Synthesized media like this are an amalgam of two or more previous arts, and became possible only as the technology developed to facilitate such a medium.

"'Recombinant Flux' refers to the creative process of utilizing multiple media (digital and otherwise) as well as the challenge and uncertain stability of the 'medium' itself. In the digital age, the momentum of technological progress creates an environment in a constant state of flux. The advance of science and digital media encourages the exploration of new possibilities, not only creatively, but to further understand the media itself. In the arts, technological 'progress' creates an atmosphere of almost constant assimilation, while imposing a more complex model of aesthetics at the same time."

The show takes place at RX Gallery, 132 Eddy Street, in San Francisco. The exhibition runs from July 1 – July 31, 2004 and opens with a reception for the artists on Thursday, July 1, from 6:00PM - 9:00PM. A panel discussion featuring the artists will be held in the Gallery on Thursday, July 29, at 8:00PM. Gallery hours are Thursday and Friday 2:00PM – 12:00AM and Saturday 9:00PM – 2:00AM and also by appointment (by calling 415-474-7973).
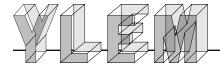
Shirley Shor received her BA in art history and philosophy from Tel-Aviv University, Israel, and recently completed an MFA in Conceptual Art from San Francisco State University. Recent shows include Yerba Buena Center for the Arts, San Francisco; Museum of Contemporary Art, Chicago; and Ars Electronica, Linz. She received the 2003 Bay Area Murphy award in fine arts. "Shirley's work breaks new ground in generative algorithmic art and investigation of fluid architecture," says Stephen Wilson, author of *Information Arts.* "Algorithmic art is a movement in which the artists create software code that then generates images or sounds. Shirley's application of these systems in architecture is quite an innovation." Shor has also written extensively on art, including reviews of the DEMO culture, rhizomes, and the film *PI.* She and Scott Draves are currently showing in San Francisco at NewFangle.

Christina McPhee is a multimedia artist working in painting, photography, video/performance installation, net art and electronic music. In "Recombinant Flux," McPhee shows work from the series Slipstreamkonza, an art/science collaborative project that addresses aesthetics of digital data expression of land as a breathing ecosystem and as a manifestation of climate change. Slipstreamkonza uses the time-based data stream of carbon flux as a basis for a generative, rhythmic, virtual expression of sound and net-based telematic installation. McPhee showed the Slipstreamkonza images at Kala Art Institute as part of the show for the James Phelan Award in Printmaking from the San Francisco Foundation. McPhee will have an article "Net Baroque," in the *Ctheory Reader* (edited by Arthur and Marilouise Kroker).

Christina McPhee's article was originally submitted to me by Brett Stalbaum, to be included in an issue of the YLEM Journal on the topic of Big Data Sets edit by Stalbaum.. The other two articles in this group will be published later this year. As Stalbaum put it in his introductory remarks, "Christina McPhee is interested in the sonification of environmental data

in 'Sense of Place and Sonic Topologies: Towards a Telemimetic Sublime in the Data Landscape'. Her text is a theoretical riff based in part on her experience to date with her nascent Slipstreamkonza project, which processes data representing the carbon fluctuation of tall prairie grasses. McPhee's text provides interesting connective tissue between Andrea Polli's text and Lisa Jevbratt's. McPhee's text is related to Polli's not only in terms of their shared interest in data sonification and collaboration with science, but they also meet up in something of a rapprochement with the romantic tradition that Manovich discusses in his 2002 essay titled 'The Anti-Sublime Ideal in Data Art'. Polli's notion of how data sonification might lend to a 'physical and emotional exhilaration [that] enhances the scientist's understanding' is obviously congruent with McPhee's notion that '...one may turn a gaze to what cannot be "seen"'. Here we move into a zone of the sublime. Sublimity refers to that which is below, beyond or immanent relative to an ontological or cognitive threshold. I assume that there is a way of expressing this indeterminate zone, or invisible condition, in both the realms of the physical, cultural landscape and in the interior, "behind the screen" landscape of the net.'"

Dr. Cliff Pickover is the author of over 30 books with such psychedelic titles as *Keys to Infinity, Surfing through Hyperspace, Time: A Traveler's Guide, The Mathematics of Oz, The Paradox of God, Calculus and Pizza, Sushi Never Sleeps, The Lobotomy Club, and Liquid Earth.* His web site www.pickover.comhas received over a million visits. His RealityCarnival.Com blog is currently his most popular web page. Pickover contributed an article to the November-December, 1999 issue of the YLEM Journal. He also writes science fiction.

My review of Stephen Wilson's Information Arts was originally written in 2002, when the book first appeared, but I never managed to slot it into the format of any of the issues I edited since then. Now seems an appropriate time, especially since Wilson was Shirley Shor's MFA advisor at San Francisco State University.

## YLEM Forum

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**YLEM Forum: Art and the Earth**
**Wednesday, July 14, 7:30 pm**
**McBean Theater, Exploratorium**
**3501 Lyon St.**
**San Francisco, CA 94123**
**Free, Open to the public and wheelchair accessible**

Since ancient China, Earth's geology has inspired artists. The view from space is a new landscape, and technologies like computer animation aid understanding. Even artful traditional landscape photography is enhanced by high-end digital cameras. Come see what both artists and geologists are creating.

**Program**
**Geologic Maps**
Beautiful geologic maps will be displayed, and Jonathan Boxerman will explain the amazing Earth structures they show. He is a photographer and geologist. Currently, he is studying with Dr. Ray Pestrong at San Francisco State University. Together they are investigating tafoni weathering processes along the coast of Northern California. He will bring samples of this strange rock formation, also known as "lattice rock." Trudy Myrrh Reagan, artist daughter of geologist Philip B. King, will show how they have influenced her art. She founded YLEM in 1981.

**Geographic Information Systems**
Computer animations will show how geographic information systems (GIS) technologies are used by the USGS Volcano Hazards Team to visualize and analyze the geology and volcano hazards at Mount Shasta, California, the geology, geomorphology, and geologic history of the depths of Crater Lake, Oregon, and the volcanically active Hawaiian Islands and surrounding sea floor. GIS specialists from the U.S. Geological Survey, David W. Ramsey and Joel E. Robinson will present their animation of geologic processes.

**The Magic Planet**
We will see more animation, inside a transparent sphere! Developed by the Silicon Valley firm, Global Imagination, "Magic Planet" spherical displays of the Earth grab people's attention and spark their imagination. They make it much easier for people to intuitively understand dynamic global systems - whether it's climate, the biosphere, geologic history or any other. They help tell stories about planets in a much more compelling way, so people want to repeat the experience, learning new things each time.

**Pioneering Digital Landscape Photography by Stephen Johnson**
Since 1989, Johnson's photographic work has explored computers as new photographic and design tools. He is finishing work on a major new endeavor, the groundbreaking digital national parks project "With A New Eye," using digital sensors rather than film to make his photographs. He brings an almost Japanese sensibility to his choice of subjects, making us see famous terrain in a fresh way. In 1999, Folio Magazine declared the publication of Johnson's digital photographs in Life Magazine to be one of the Top 15 Critical Events in magazine publishing in the twentieth century. Stephen Johnson was named as a 2003 inductee into the Photoshop Hall of Fame, recognized for his achievements in Art. His pioneering work is in many permanent collections here, including the Getty Museum. Friends of Photography chose his work as their first digital image in their fine print collector's program.

LM: So the pieces in the RX Gallery show are generative architecture, is that right?

SS: They're all from the series called "Other Spaces", and the subtitle is "Possible Typography". Basically they are screen shots from moving images, animations. On the computer I manipulated those images. From the beginning I didn't think to get into prints, and to have just flat images. I just wanted to have some screen shots and some moments within these animations. So I started just to record those moments, and to take some screen shots of them, and then I just fell in love with the imagery. It was like the next level after I did the code and let it run, and the animation was running, and then I was capturing those moments. Then after I manipulated those images, I went back to the computer and I started to manipulate the code itself in a way that it will function the same way as those images look.

LM: So it's like a feedback loop.

SS: In a way, all my pieces, all the real-time installations that I do, are all based on a set of simple rules that create and generate those architecture-based movements. Then when it's in the gallery and it's projected and it keeps running, the computer doesn't need me any more. I did my part, and now it's a collaboration with the computer, with a machine. Then the machine has the code, and it basically will generate the images. I wanted to come back into the picture, and I wanted to decide, and I wanted to change stuff. I didn't just want the computer to run without me. I wanted some input into the whole process. It was my way to get into this game again, to take those screen shots, to manipulate with them, and then to choose which kind of moments from life I wanted to continue to work on. So it's a really interesting way to work between me and the machine.

LM: What language are you writing your code in?

SS: It's C++. Also I'm working with a friend Pierce Haken - and he's the real coder. I can do the really simple beginning, but it's not so elegant, so I'm working with other people to help me with the code itself.

LM: So you've set up a program that creates a virtual world in real time, and you're pulling out images…

SS: Segments from the time. So it will be snapshots, almost like I was God, which created this world, and now I'm capturing those moments almost like taking pictures of this reality. This is why I don't really like to show my stuff on DVD. It's almost like to show life in DVD, to record life, and then to see it and to absorb this life. The whole point here is that it's real-time generated.

LM: So the program is creating virtual architecture all the time, whether somebody is looking at it or not. I think that's an interesting concept.

SS: I think it's interesting as well. I thought about this, and I'm not trying to educate people about real-time performances, but they keep saying "You can see the same imagery running from a DVD, or it could be a loop, and visually no one would notice this." And that's right, but then I'm telling them, "Yes, you can record your life, and you can sit in front of the TV and watch life, like in a delay." But the real-time component is something that is very inherent and very strong in my work. It's almost like to write and to live at the same time. The code is writing at the same time as it's showing the images. So life and code merge. You can see this image, and it will be unique for the same moment. You can go and you can come back and look at the things, and the imagery will remain the same in a way, but be different variations, different structure maybe, different colors. It will never be the same, because each moment it's unique for the same thing. It's not going to do any transformation to a different system. You will recognize it if you will come a week after, a month after, or a year after. The structure of the system will be the same, but the moments will be unique. The worlds continue to function, with us and without us. It's almost like to look at real life. We can wake up in the morning, we see it's the same world. We don't wake up every day in a different world. This is the analogy that I want to create.

LM: I'm struck by the fact that generative art always seems to create art that the artist finds pleasing. Do you find that to be true?

SS: I'm more into the other point that you said, that it's running and it exists with you and without you, and it's very closely related to the whole postmodern idea about the subject. The subject is not really central any more. Things are functioning with us and without us, and we are just really a small part of the machine. The whole system is around us, and it's all linked. Everything is a huge network, a rhizome perspective. We're not in the center. It's not starting from us and going from there to affect the rest of the net. We're just part of this networking. I really like to move the subject from the middle, from the center, into the other parts of the net.

*Background image: Exe*

LM: So you are using a creative philosophy in making your art?

SS: I use surface philosophy as opposed to depth philosophy. Surface philosophy means that we create meanings from linking one thing to another on the net. We can understand concepts and ideas and things just by bringing something next to something else. Then the meaning appears or emerges. As opposed to depth philosophy, that in order to understand something, we need to go into the roots of the idea. Like where these words or this concept are coming from, and to learn the history of this concept, and to see how this concept is in history, and what does it mean to different cultures. The surface philosophy is experienced more widely on the surface. Everything exists, everything is on the surface. Everything appears, you can see everything. But what really matters is the way we link one thing to another. That's what makes the difference.

LM: This reminds me of what Lev Manovich says about how everything is data, and it's the way the data is related that's important, where the meaning is.

SS: Every field took those ideas into their own space and tried to articulate and tried to incorporate them into their own philosophy. Rhizome is against roots, it's against depth, it's against one center. If we're talking about structure, it doesn't create trees any more. In trees we have the leaves, we have the roots, we have one point from which everything started.

LM: You have hierarchy.

SS: Right, you have hierarchy. So from the tree to the rhizome, which is more grid-like, it's all on the grid. And on the grid, everything is possible. It can go from one place to another without using the tree terminology.

LM: So instead of being about individuals, it's about relationships.

SS: That's one way to put it. There are so many ways to try to visualize the concept of the rhizome. All of these postmodern concepts have really fed me for the last four years. All of my animations are very simple visualizations that I was using to explain to myself what all those postmodern terms are. I was trying to find a visual system of what rhizome is, what becoming is, what surface philosophy is.

LM: Do you find yourself exploring these virtual worlds you create?

SS: The first stage is to observe life and learn how systems work in life. There are all kinds of systems in terms of behaviors and how things function, what exists, what doesn't exist, how things happen, how communications are created. Then I came out with a few systems. Then I was doing the code based on observations of real life. Then I had the codes running. The second stage was to project it in a room. Then came the experience part of it. Then the system came to be transparent. You almost see the back scene of those systems. This is what I was trying to achieve, to make the system visible, to make the mechanism clear.

LM: Can you navigate through it, or does it move around you?

SS: Both. There are some pieces that it doesn't matter what you will do, you will be surrounded by it. If it's projected on four walls and you're in the middle, you will see the walls coming to life, like liquid architecture. Like Marcos Novak does sometimes. So the walls and animation move you, the individual, within the space itself. I don't need the individual to control the room, because anyway everything is moving. It's all about who operates whom, in terms of interactivity. I'm coming from interactive art, so I did lots of interactivity in my past works. Now it's more about trying to project something which is not necessarily interactive, but it feels more interactive than before. There is an interesting relationship with who creates whom, who controls whom? You are controlled by the moving images that you are surrounded by, or the opposite way. So it's two ways. It's very dialectic.

LM: I was thinking the first virtual reality was the Temple, which was destroyed, and from then on the Jews carried the Temple in their hearts.

SS: That's a really good analogy, actually. There is no such thing as virtual reality, virtual architecture, virtual spaces any more. You need to be there in order to experience it, so it's not virtual any more. We function in so many virtual spaces in everyday life, so sometimes when we think virtual. What do you really mean when you say virtual space? From Foucault, where he was talking about virtual spaces, all the way to Derrida and the others. I like this analogy with the Temple.

LM: How did Foucault talk about virtual reality?

*Split*

SS: When he's talking in his text "Other Spaces," he's talking about heterotopias. He didn't really mention the word "virtual", but the whole text is about virtual spaces. How space contains all those virtual components into it. When he was talking about spaces, he was talking about physical spaces, but he was he was talking in a virtual concept about those physical spaces.

LM: So you're dealing with postmodern theory on an ongoing basis.

SS: I just finished my Masters' Thesis for the Conceptual Art Department at San Francisco State University. I just submitted it today. It's basically a long, long statement about my work and the way it's related to theory, very deep theory. I'm starting with the big questions. From source to process, from the roots to the surface, and then from Thales to Derrida. So I'm going all the way back to Greek philosophy, the way they're talking about process. "You can't step into the same river twice"--that's Heraclitus. All the way to Derrida. I'm starting with the basic questions that I want to ask about life. This is where philosophy started. Then I'm moving to the systems that I was creating, the "Split", the "Grid". I'm showing the various systems that I was creating virtually on the computer, then the way I'm projecting it in the physical space.

LM: You got your BA in Tel Aviv in art history, right?

SS: Art history and philosophy.

LM: Isn't it unusual for someone so steeped in theory to be producing art as extensively as you are?

SS: I didn't know that I would start to produce art. It just happened a few years ago. It was a good accident, but I was sure that I would continue to write. I did reviews, and I was always interested in engaging between art and technology and concepts and cultural issues, and then to tie it into political situations. Coming from Israel, you can't really avoid all those is-

sues. So all this training brought me to write about cultural stuff, and I was more and more into spaces and boundaries and borders and how we create spaces, and what do borders mean. The questions were based on how we can make our life easier, or less tough.

LM: You said that you think of space as a verb. What do you mean by that?

SS: It means that you need to activate it all the time. It's not something that we were born and our parents gave us, "This is the land, this is the space, take it, this is your space for the rest of your life." Space is something which is very abstract, or very liquid in concept. You write your own space. You create your own space. We need to reclaim this space over and over again. By putting up boundaries, we're trying to do it, and to make our lives easier. "This is the border, don't cross the border, because this is my space and this is your space."
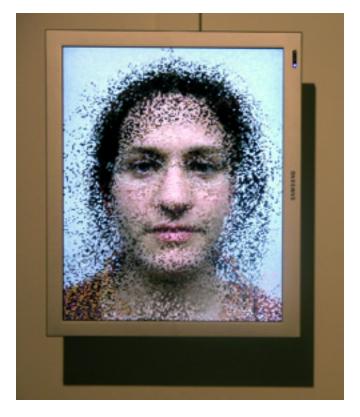
LM: So it's a combination of politics and art.

SS: To be in Israel is to see how we fight over borders that create all those meanings. And then to see my kid growing up with other kids, sitting in the sandbox, and they say "This is my space," and then the other kid saying "This is my space." It's all starting from the very beginning. So then I started to think, "What if the border itself could be fuzzy?" Programming the computer was a perfect way for me to create spaces which keep changing all the time. The borders change because of the spaces. What creates what? Do the spaces create the borders, or do the borders create the spaces? I want to create something which is more free, and more right, in that there is coexistence between the spaces. This space is big and it will grow and then it will be bigger, but then it will be smaller, and then some other space will take over this space. Then there is nice coexistence between all those areas. I think this is more manifest in the "Split" pieces. It's all based on rectangles that move and shift with the borders. The space moves all the time, and the borders themselves. It's the same amount of space, but the way you divide this space, there are tons of ways to divide one's space. I wanted to create something like that.

> **There is no such thing as virtual reality, virtual architecture, virtual spaces any more. You need to be there in order to experience it, so it's not virtual any more.**



*Memory Without Origin*

*Becoming an Artist*

LM: I think of architecture as the most controversial art form there is, if it's an art form at all.

SS: I was always attached to architecture. The architect needs to deal with all the components, and to make everyone happy. So he's basically acting like God. He's creating a place, and he needs to put all the components together. It's the same thing to be a programmer. You're creating this kind of space. I really like this analogy, the architect and the programmer. Then to see those architectural-based visuals running in a physical space, the same thing I do, it's more like to break those physical boundaries and to break the walls, or to change the physical architecture in a way you will change your way of thinking of space and time. This is my motivation.

LM: I was interested in your article on your web site about DEMOs. Did you first discover that culture in Israel?

SS: No, in Israel it's actually not so strong. I experienced it, last summer I went to Ars Electronica. I showed some of my stuff over there. I was participating in DEMO discussions over there. After I wrote this text with Aviv Eyal. There I met a few groups of DEMO people from Europe, so we had really great dialogs. I was just curious about this phenomenon. They're using real time, and that's what I'm using in my art, so I want to expand my experience and my knowledge about other real-time practices. It was pure curiosity, something that I just dug into and found people to talk with and to learn more and to see one event. But it's not something that I'm part of. It's crazy to do a DEMO. But it was related to my art in terms of the real-time, the process, the visuals, but it's really far from my art as well. I want to understand it better in order to understand my stuff better. It was more research. The text came out just be-

cause I thought it was a really interesting art form. I also want to promote it here in the States, because just a few people do DEMOs here.

LM: And it's available on the Web here. It's mixed media, with sound and visuals…
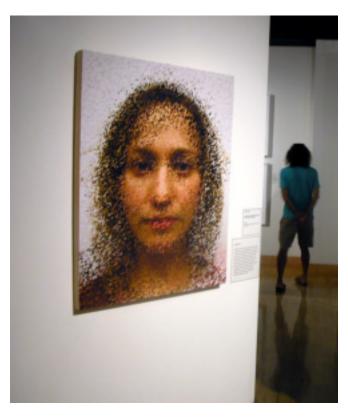
SS: It's more community-based stuff. It's not just the visual. When you go to a gallery or a museum, you won't see a DEMO on a DVD. This is no DEMO. The DEMO is more like when you're talking about hip-hop culture. Hip-hop is not just the rap music song. It's all the cultural things around it. With the DEMO scene it's the same. It's a bunch of people coming together, sitting together, programming together, and showing it at the same time, so it's like sharing information, sharing the code, inter-related media stuff, musicians coming into it. Lots of sounds, and basically it's a big rave party. This is the DEMO. Without this component, it's not going to be DEMO.

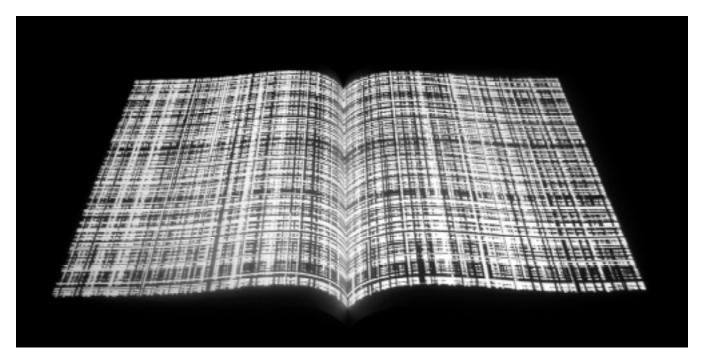LM: Does DEMO culture come out of hacker culture?

SS: Yes, it comes from the hackers. Now it's part of a cultural experience that is something else. But I think it's coming from the same place. It's the avant-garde of those cultural experiences.

LM: Why do you work in so many media?

SS: I guess, like the concept of my works, I don't want it to be fixed in just one medium. I want to explore. I like the new media, but in order to understand more the new media and to create something that will be fresh and interesting I need the feedback and the integrations with other media. I've always



*Becoming an Artist*

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liked the interdisciplinary area. The theory, the philosophy, the other media. So when I bring everything together in one installation, I feel it's more rich. Sometimes in order to define something in the new media, you need to borrow some other stuff from other media.

LM: Have you worked in painting and photography?

SS: Never painting. I never painted. I'm working on photography, but it will never be just for the photograph itself.

LM: So you've tended to work with digital media.

SS: Basically digital media.

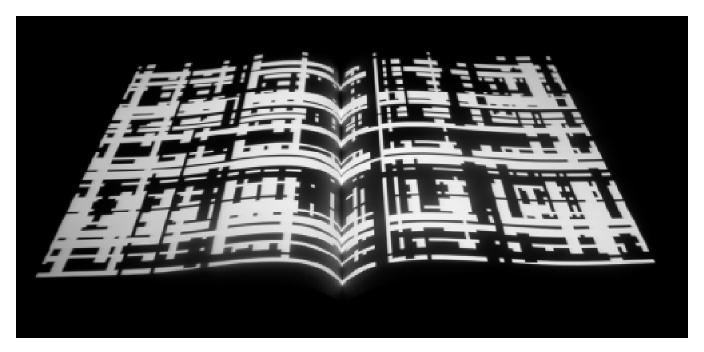LM: What new media do you think you'll be working with eventually?

SS: I don't know. At the moment I'm so focused on what I'm doing right now, in this real time and new media installation. I like to work with installations. This is the most powerful thing for me. In the installations I can project the virtual into the physical space, so there is a nice combination of those two components. There is the code-based animation, the computer that runs animation, and then the projection, to incorporate it into an object. So it always will be installation or space that will have the virtual architecture component into it, and the physical object or space. This is what I'm interested in and what I'm working on now.

LM: Most of your work seems to be abstract, but not the piece called "Becoming an Artist".

SS: It's not abstract, but it takes identity and transfers it into something which is abstract. You see images here, but the whole idea behind this piece is how we can create identity, abstract identity. There is this interplay between the faces, almost like to open the boundaries of the body itself. "Becoming an Artist" is one of the series of "Self-Portraits with Others". So it's my portrait with others. Because we can't define ourself just by ourself. We need others in order to reclaim our own identity, and to understand ourselves better. But I'm playing with the same concept that I was talking about in the spaces. The way we reclaim space is the same system as to reclaim identity. People keep asking me what happened that I moved from architecture so strongly into faces. It was kind of weird for them. And I said, "No, it's exactly the same thing". I'm talking about the body as architectural structure as well. How we can open ourselves in terms of how to expose ourselves and to open the boundaries of our body, into other intersections with other identities.

LM: In the piece "Becoming", abstract identity is also subsumed into relationship.

SS: The interesting thing in "Becoming", in the concept itself, you will never see the fixed image. It will be always the becoming thing. The process itself is the being. Also in Becoming, with the abstract colors, there is no one color that will take over the

whole space. It will always end with two colors, and then it will stop. Then a new cycle will start. It's a state of being. This is the way I want to experience space and identity. It's super hard, because nobody taught us how to do it, so I'm playing with this conceptually in a way. I'm trying to train myself to live by those "what ifs".

LM: It seems to me that people who create with the computer produce either entities or spaces, and you're creating spaces.

SS: That's an interesting distinction. I've never thought about this. But you're right. There are two groups of people, and each does only one. This piece is called "Rhizome". This is one of the systems that I've been creating. Here's it's projecting on a transparent weather balloon. It's pretty big. So it's reflecting on all sides. This was at the San Francisco Art Commission Gallery. At night it was very nice. It was almost like a light sculpture. Here there are circles that don't have fixed points to go, so they're moving inside and creating spaces inside. It moves from color to black-and-white.

LM: Where did the sound come from?

SS: It's an original sound track just for this specific piece created with a young Isreali musician, Alon Shadot. It doesn't really function by the movements, but it's another element with the piece.

LM: So you created the sound, too?

SS: Yes. This piece is on two walls. It's to show you the way I'm trying to play with the physical space itself, and trying to deconstruct the space in order to create something else out of this space. To show how we can use virtual spaces or virtual animations to change our physical space. This is what I'm going to do for the NewFangle show. It's "Becoming" on a sand box. It will be more structural-based, almost like a sculpture.

But the hard core of the piece is the real-time animation.

LM: So you think we can make a better world through the art we're doing?

SS: I'm optimistic. This is my way of thinking. I still think that we can make it better.

*slipstreamkonza.3*

## I Introduction: Net and Gaia

Imagine interpolated virtual and actual spaces that thrive and decay, die and live in a riparian zone. Watered by pervasive computing as a neural territory or intelligent topology, the net acts as if alive. As a place of continuous ruin and simultaneous regeneration, the networked space of electronic communications is re-presenting, itself. A semiotic model may offer us the net as a subjective topology, a synaptic process-space. This space is not silent. Semiotically, it "voices" itself. A model of the net as a live voice finds some echo in analogy to the Gaia hypothesis on the nature of the physical landscape. As life, Gaia persistently self-represents, or emits information about herself [1]. This is an old idea in new dress. "Day by day pours forth speech," declares the Psalmist. In semiotic terms, a landscape of voice or self-expressive phenomena, as actual, real information—is both a data landscape and sonic topology. Where and what is this place? What is the sense of place in the data landscape?



*slipstreamkonza.2*

## II Topology and Telemimesis

Two research projects address the self-expressive condition, in art on the cyborg state of the net, Aphasia/Ellipsis, and in the physical landscape, Slipstreamkonza. In the interests of brevity, the present remarks will lead to a discussion of Slipstreamkonza, as it is my most current area of activity. More content on Aphasia/Ellipsis is available at www.christinamcphee.net.

Let us intuit the structure, or topology of data streams, whether in the electronic or in the natural ecosystem, as an invisible domain that persists over and through discontinuities. The leap across the breaks, or breakdowns, can be expressed musically by means of formal structures of recursion and feedback loops, as in classic cybernetic theory, but also as in Baroque fugue structures. I imagine recursion and flow, between natural data and human/machine, an interpolated, mutual consciousness. The place of flow is sonically expressive.

A topology is a word (logos) of a place (topos). A hypothesis about what constitutes this "word" or voice of a place on the level of artistic process is aesthetic in nature and intent. Aesthetically, such a place may be explored as a process of telemimesis. "Telemimesis" joins tele -- vectors across distance in space, as if space is actually layered time—with mimesis, in the Platonic sense of figuration of a prescient or hidden motif.

## III Sublimity and Entropy

As a visual artist, one may turn a gaze to what cannot be 'seen'. Here we move into a zone of the sublime. Sublimity refers to that which is below, beyond or immanent relative to an ontological or cognitive threshold. I assume that there is a way of expressing this indeterminate zone, or invisible condition, in both the realms of the physical, cultural landscape and in the interior, "behind the screen" landscape of the net.

As an ecosystem, the data landscape may be described as continually subject to entropy, following the second law of thermodynamics. Life itself may be thought of arising, like a phoenix from ashes, as an articulate resistance to entropy. A continuous dialectic between entropy and the architectural self-structuring process of life means that homeostasis is predicated on breakdown, or ruin. Data stream is not always continuous. Scientific instrumentation for measurement and transmission of physical data may fail. Anomalies of landscape data are not always explicable based on known models. Humans struggle with the limitations of their bodies, including, fatigue, inattention, illness and mortality. A telemimetic aesthetic of the sense of place in the data landscape accommodates breakdown of the "language" of information streams. This is true as much for electronic cultural topologies of the net as for the physical landscape of our planet.



*slipstreamkonza.4*

## IV Synaptic Recursions

A poetics of entropy and growth proceeds analogically to forms of recursion and feedback loops, as in the art of fugue. I imagine recursion and flow, between natural data and human/machine, an interpolated, mutual consciousness. [2] The place of flow is sonically expressive. New research moves towards musical-neural topologies as precedents for an orchestration of data, code, visualization and sound—inasmuch as the human user and the artist are assumed to be collaborative agents within a self-expressive, prescient landscape. A possibility is that the human synaptic pathway performs as a layer of dynamic connotation. Like a trace, or vector, over and through the data landscape, the synaptic layer is a human transmitter of landscape's self-revelation. Humans aesthetically collaborate

in a system of connotation that is never fully seen, heard or actualized: existing in time, the system is grasped in spatial fragments. Or, to put it another way, the landscape represents itself in and as layers of time and human presence. Between 'natural' morphologies in the brain/mind, and the visualization and acoustic revelation of landscape, is a space, or place of telemimesis. It is mimetic in that it represents itself relative to a precessive content (landscape data) and does so at a distance from itself.

Sound, contextualized within the predominant visuality of digital media GUI, has a peculiar valiance and expressive power. Orpheus makes music from the underground, or invisible locale and transmits telematically in a delayed time mode, like a voice from a hidden subject, or a music made from an invisible data stream. Telematic art is asynchronous communication: between the in and out of data feed and interpretation, there is an alteration in time and space. At the point of rupture, in the place between, is to be found the "sense of place" in virtual topologies. Thus the Platonic view of an anterior, or precedent Form, which comes into consciousness only through a physical expression is put into a feedback loop. Things move in and out of a condition of being nameable, or visualized, in a continuous Mobius strip looping. I hope to show that a telemimetic function underscores why sound, and music, transport aesthetic meaning across the ever –shifting break/loop between the visible and the invisible. I suspect that there is a kind of transport membrane over this abyss (to borrow from Derrida) and that this transport mechanism, aesthetically, is a time-based topology, e.g., music.
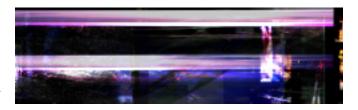


*slipstreamkonza.5*

## V Slipstream Breathing

We might make an analogy of this recursion to a kind of breathing, in and out, between the inside of the body and the outside. In terms of the Gaia hypothesis, let us imagine an emission of data, and a gathering-in of data, like breathing. Global climatology attempts to study climate change by collecting millions of data samples of diurnal carbon absorption and release on the tall grass prairie, an ecologically critical environment in North America and elsewhere. The prairie is implicated within the phenomenon of global warming in ways that are not clearly seen, and are under current intensive study.

Slipstreamkonza is an art/science collaborative project that addresses aesthetics of digital data expression of land as a breathing ecosystem and as manifestation of climate change. Slipstreamkonza uses the time based data stream of carbon flux as a basis for a generative, rhythmic, virtual expression of sound and net-based telematic installation.
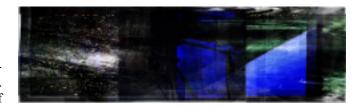


*slipstreamkonza.6*

## VI konza and telemimesis

Konza is the Osage term for "south wind." Like breath on a mirror, konza is an evanescent imprint of an invisible dynamic. Prairies worldwide capture and release carbon in a waveform breath. At the threshold of the exchange between atmosphere and surface is the life of the planet; the Konza prairie is a site that can be interpreted aesthetically in terms of a telemimetic topology using sonic forms relative to visual phenomena in interactive art.

Slipstreamkonza does not engage in the conventions of data emulation, or scientific visualization, in order to better understand the data. Yet, the encounter between the human response and the landscape's self-expression as data is of prime importance. I am interested in the relationship, or dynamic, between the data and the human imagination. The carbon flux on the prairie is a kind of breathing, and it is both useful and powerful to realize that the prairie ecosystem is in itself a living organization.

Imagine interpolation of data emulation into live space as a dialectic or set of interface patterns between paratopic, polyphonic, and polychromatic volumes. We might imagine interpolation and superimposition, like montage, but as virtual and physical spaces, using layers of content that are expressions of hidden data through a semi-permeable membrane, or data transport mode. Maybe time becomes metabolic: it gives rise to a productive structure, composed of intelligent units, or affective artifacts in continuous movement and states of disclosure.



*sslipstreamkonza.7*

## VII conclusion

My research desires the mapping a generative code structure to an acoustic grain that is scalable and has the integrative geometry and immanent temporality of the Mobius strip. A moving sense of place gathers its momentum and definition on the fly, like a continuous improvisation that is not entirely responsive to human use and reflection. A poetics of that place, both virtual and physical, in the mixed volumes of fluid media, might give rise to a polyphonic design strategy, where arching shifts between recursion and sonority, darkness and density, transparency and light, processional and volume are as responsive

interactive structures in performative multimedia installations. It is my hope that, like a fold or complex cut in the fabric of the data landscape, sonic topologies are a research site for aesthetics of telemimesis in digital media practice.

Notes

[1] Geri Wittig has looked at the Gaia hypothesis relative to the discourse on landscape data, holism and science, and includes a brief, helpful bibliography on this topic, at <http://www.c5corp.com/research/complexsystem.shtml>.

[2] Brett Stalbaum asserts that "data's role in the instantiation of the actual may be a matter of virtual informatic interrelations (or external relations between data sets), forming their own consensual domains that heretofore have not yet been observed as such, but which potentially inflect the operation of actual systems via informational transfer between neighboring systems of interrelations." (http://www.noemalab.com/sections/ideas/ideas_articles/stalbaum_landscape_art.html)



*slipstreamkonza.8*

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**Review of Leonardo's Special Issue on "The Art of Burning Man," Volume 36, Number 5, 2003 (MIT Press)**
**Dr. Cliff Pickover, www.pickover.com**

I've been privileged to sit on the Leonardo Editorial Board for a number of years and am continually fascinated by the range and diversity of topics covered in this impressive journal. Leonardo began international publication in 1968, and continues to focus on writings by artists who work with technology-based art media. Most of the artists use scientific tools, and the journal serves art and science communities by promoting work at the intersection of the arts, sciences, and technology. This recent issue is devoted to the art of Burning Man and includes articles and photos edited by Burning Man documentary writer Louis Brill and art curator LadyBee.

What exactly is Burning Man? Such a challenging question! The people who run BurningMan.Com admit that, "Trying to explain what Burning Man is to someone who has never been to the event is like trying to explain what a particular color looks like to someone who is blind." Nevertheless, I'll do my best to describe the phenomenon. Burning Man is an annual event that takes place in the Black Rock Desert, a prehistoric lake bed 120 miles north of Reno, Nevada. At times, the lake bed is under water, but during the summer, it provides a huge expanse of flat land with a cracked alkali surface. And there is nothing else – not a single blade of grass, hardly a single stone. It's as if you stepped off the Earth and onto another planet.

Burning Man is always held the week prior to and including Labor Day weekend. During the event, a colorful collection of over 25,000 people meet to be part of an experimental community with one primary commandment: Meet fellow travelers and express yourself! Art always plays a major role at Burning Man. Each year, Larry Harvey, founder of the Burning Man project, suggests an art theme, such as Outer Space, Time, or Beyond Belief. Participants express the theme with large-scale art installations, unusual clothing, and provocative body paint. The materials include paint, fire, metal, lights, plastic, electronics, and more. In the past, we've seen a 24-foot-tall inflatable woman made from billboard vinyl and a Temple of Tears made from recycled plywood that was set afire. We've seen mobile wooden ducks, mud sculptures, and glistening mandalas made of steel.

It is not an exaggeration to suggest that Burning Man has created a new culture that revolves around it, and promoted a new way of thinking and dreaming. The feeling is magical, psychedelic, and transdimensional as spectators, artists, and art fuse as if subatomic putty in the hands of cosmic sculpture. The Burning Man event concludes with the burning of a 40-foot-tall humanoid sculpture. This flamboyant immolation is a metaphor for change, transformation, rejuvenation, and death of the old self to clear the way for the new. At the conclusion of Burning Man, participants make sure to leave absolutely no trace, so that the desert is left in pristine condition.

This issue of Leonardo begins with an essay by LadyBee (a.k.a. Christine Kirsten) who discusses the impact of the event on artists, followed by a number of artists' statements. The artwork includes diverse pieces with names such as Temple of Rudra, Temporal Decomposition, Dr MegaVolt, The Ammonite Project, Egeria Firefall, The One Tree, The Plastic Chapel, Beaming Man, The Lily Pond, The Golden Tower Project, The Temple of Tears, The Myth of Sisyphus, The Cradle, Draka the Flaming Metal Dragon, The Nebulous Entity, The Bone Tree, The Telestereoscope, The Trojan Duck Lounge, The Ribcage, The Sta-Puft Lady, The Furura Deluxe Bubble Fountain, Flock and L2K.

Dana Albany's The Bone Tree is a 27-foot-tall tree completely covered with cattle bones, and it makes use of a lighting system for night illumination. Aaron Wolf Baum's The Nebulous Entity resembles a nerve center for an alien civilization. The piece roams the lake bed while emitting audio clips. The sound system includes a laptop computer with digitized crying babies and sounds sampled from its environment at Burning Man. Michael Christian's Flock is a fantastic steel structure that resembles a headless horse suspended on 35-foot-long legs. Finley

Fryer's The Plastic Chapel is a large sculpture constructed from plastic and lit from within by fiber-optic lighting.

If I were rich, I would create a Burning Man Clone Foundation to promote formation of additional Burning Man events to be held as close as possible to countries that suffer from repression and which have the greatest need for increased tolerance, novelty generation, and creative sparks. Burning Man is an incubator for ideas, for bringing people together, for flouting conformity. It's an infinite outdoor art gallery, a space without limitation.

I would also create a Burning Man Technology Foundation called Oblongata to establish events focussing on technology for mind-expansion: from floatation tanks to devices that encourage lucid dreaming. This would be an indoor gathering where people can listen to psychedelic music while eating fugu sushi, burning incense, gazing at computer graphics of quaternion fractals, and discussing string theory, tachyons, the chronology protection conjecture, and DMT-induced visions of alternate realities, and pondering Cantor's continuum hypothesis and transcendental numbers like pi and Champernowne's constant.

Finally, I would also create an on-line virtual reality reminiscent of Burning Man. I'd call it the Aortic Arch. The emphasis is perhaps less on art but more on ideas. Here, we'll discuss books like Geoff Dyer's Yoga *for People Who Can't Be Bothered to Do It,* Daniel Pinchbeck's *Breaking Open the Head: A Psychedelic Journey into the Heart of Contemporary Shamanism* and movies like *Vanilla Sky, Jacob's Ladder,* and *From Beyond.* But more importantly, we'll be doing – writing books together, creating art, generating ideas. Anyone can participate in the Arch, but the upper realms are open only to the movers, shakers, and dreamers who have achieved something in life, like writing a book, making a movie, patenting an invention, or simply becoming famous. It would include people like Xeni Jardin, Jeff Bezos, John Brockman, Maria Spiropulu, Connie Willis, Stephen Spielberg, Arthur C. Clarke, Dean Koontz, Freeman Dyson, Neal Stephenson, Maggie Balistreri, and Dr. Rick Strassman, a clinical psychiatrist who conducted DEA-approved research in which he injected sixty volunteers with DMT, one of the most powerful psychedelics known. In the Arch, we will start projects, make money, enhance our creativity, generate novelty, and push the limits of possibility. In the Arch, we can all look for the hidden mechanism, feel the connections, pierce the cosmic shroud, and sail on the shoreless sea of love.

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## Review of *Information Arts* By Stephen Wilson
### Loren Means

When Stephen Wilson's book, *Information Arts* (MIT Press, Leonardo Series, 2002) was released, a mammoth and well-catered reception was held at Microsoft's office in Mountain View, California. Wilson said to the assembled throng, "Artists learn more from scientists than scientists learn from artists. I hope that will change." Wilson then introduced Ken Goldberg, a professor of robotics in the Engineering Department at UC Berkeley, a man who seems to always be seeing vast humor in whatever he is perceiving, who amplified on Wilson's remark: "If an artist sees a work of science he doesn't understand, he says, 'It must be wonderful.' If a scientist sees a work of art he doesn't understand, he says, 'It must be crap.'" One phenomenon which seems to be emerging to address this dilemma is the growing number of scientists who are also artists.

Stephen Wilson is an artist and Director of Conceptual Design in the Computer Arts Program of the Art Department at San Francisco State University, and has published two previous books, *Using Computers to Create Art* (Prentice Hall, 1986) and *Multimedia Design with HyperCard* (Prentice Hall, 1991). These are how-to books, very practical, whereas Information Arts leans instead toward the theoretical. The book is massive in size, at 945 pages, and Wilson told me that originally he intended it to be twice as long. The book documents an explosion in the number of artists utilizing science and technology in the creation of their work in the last few years, devoting a sentence to some artists and several pages to others, as well as exploring the rationales and the contexts in which this art is created.

In his "Foreword" to the book , Joel Slayton, a professor of new media at San Jose State University, says: "Stephen Wilson's Information Arts: Intersection of Art, Science, and Technology is the first comprehensive international survey of artists working at the frontiers of scientific inquiry and emerging technologies." Perhaps the key word in that sentence is "comprehensive". Wilson's book is, rather, the largest in a long series of international surveys of artists working at the frontiers of science and technology, from *Computer Images: State of the Art* by Joseph Deken (Stewart, Tabori & Chang, 1983), *Art and the Computer* by Melvin L. Prueitt (McGraw-Hill, 1984), *Computergraphia: New visions of form, fantasy, and function* edited by Joan Scott (Gulf, 1984), *Digital Visions: Computers and Art by Cynthia Goodman* (Abrams, 1987), and *Art of the Electronic Age* by Frank Popper (Thames and Hudson, 1993). Popper mentions Stephen Wilson several times in his book, in fact, even attributing to Wilson the invention of the Hypercard.

These books differ from Wilson's book not only in that they are infinitely less comprehensive, but also in that they tend to be coffee-table type art books, opulently illustrated in full color, while there are no color reproductions in Wilson's book. *Information Arts* seems to be physically manifesting the fact that science-based art has not found an audience among

> **If an artist sees a work of science he doesn't understand, he says, 'It must be wonderful.' If a scientist sees a work of art he doesn't understand, he says, 'It must be crap.'**

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art collectors, and is rather becoming an academic pursuit, dear to professors and museum curators. Wilson's book is one of a string of essential volumes published by MIT Press in their Leonardo series, but while their *Immersed in Technology: Art and Virtual Environments* edited by Mary Anne Moser (1996) features eighteen opulent color plates, more recent volumes like *The Digital Dialectic: New Essays on New Media* edited by Peter Lunenfeld (2000) and *The Language of New Media* by Lev Manovich (also 2000, another book I waited two years for) are manifesting a new austerity and change of emphasis from images to ideas that precludes the inclusion of color, an irony considering the fact that many science-based artists are creating the most devastatingly gorgeous manifestations of color in the lore of art history.

Wilson sidesteps an in-depth discussion of the relationship of the "Information Arts" to the theoretical crisis of contemporary art by implying that concerns with Modernism are too antiquated to bear consideration in his volume. But Wilson is himself a conceptual artist and committed to the concerns voiced under the rubric of PostModernism when the term was still current. As such, Wilson reveals an acceptance of the role of the artist as critic of the society and its ills, and of art as the bearer of ideas (in point of fact, of Information). One of the tenets of the more formalist extremes of Modernism was that art did not convey ideas or social criticism; rather that it pointed up the struggle between the inner world of the artist and the external object which is created.

As artist and psychotherapist Marta Schneider Brody points out in her article "Paul Klee: Potential Space and the Transitional Process" (*Psychoanalytic Review*, June 2001), "[Art's] value is derived from the mysterious way it affects, informs, and …allows us to create ourselves in conversation with the work of art…How is it that the artist is able to create/reveal an aspect of reality that has never been apprehended before in quite the same manner?" It could be argued that an ultimate question in the apprehending of art is the object as other—how it comes into being, and how much autonomy it has. One of the greatest strengths of Wilson's book, from my perspective, is that despite his emphasis on conceptual art, Wilson is led through his equal emphasis on interactivity as a value in art to an appreciation of the artists who are creating new life forms as works of art, which is conceivably the most monumental innovation in art since the invention of perspective. Brody quotes the psychiatrist Hannah Segal as saying "The work of art is often felt by the artist as a symbolic baby." Artificial Life creations are, in a sense, real babies, with cognition and motivations of their own, ready to bring artists and audiences the unpredictable joy, consternation, and mutual learning that children bring into the world.

As a professor friend told me, "The University becomes your patron." The problem with this is that the universities aren't really interested in being patrons, any more than corporations are. These institutions have very different agendas, and the trend in these institutions is toward more de-funding of artists and theorizers, in good times and bad, and more emphasis on the bottom line. The only way the arts can survive is by cultivating a real base of paying customers who buy what they buy because they like it, but also because they respect the integrity of the artists who make it. It is ironic that the only media in which abstraction thrives—music and visual art--are the only media in which an avant-garde has any impact at all. In other media the avant-garde is almost completely marginalized and irrelevant. And the current makers of information art will be equally marginalized as long as they refuse to make objects or engage in commerce, as long as they deal in ephemera and irony and ugliness and low humor.

Wilson's descriptions of the art and the theories behind it sometimes have a tendency toward the fragmentary, understandable considering that he his reporting on the work of literally hundreds of artists. The feeling is often of sound bytes and interactive chats, in Wilson's persistent excerpting from often very provocative texts. There is often manifested a longing for the expansive, which Wilson then makes available in his copious references to web sites where full texts are available. In the plurality of the web culture, after all, there are still artist/theorists who write at length. Unfortunately, web sites, because of the pernicious vagaries of the corporate marketplace, are among the most ephemeral manifestations of all. In the two years of its inception, Wilson collected a staggering number of URLs, of which I found with sinking regularity after typing in long and frustrating strings of arcane characters, my searches were rewarded with the ultimate frustration of the "not found." Books go out of print much sooner and more often than they should, but once you own a cherished volume, there is something about its solidity (if it is bound reasonably well) that is an anachronistic comfort in this age when conglomerates buy up file servers and trash web sites with impunity.

When I mentioned to Wilson that I had read his book from cover to cover, he expressed surprise. I think he expects the book to be dipped into, like an encyclopedia. I told him I had had trouble with some of the web sites referenced in the book, and he referred me to his personal web page of comprehensive links, which he guaranteed me would always be current. That URL is http://userwww.sfsu.edu/~swilson/. Excerpts from Wilson's writings can also be found in the Jan-Feb, 2002 issue of the YLEM Journal, archived at www.ylem.org.

The May, 2004 issue of Microscopy Today has an article by Lind Strzegowski and T. P. Russell entitled "Project VISUAL: Facilitating the Connection Between Art and Science". The article talks about "VISUAL (Ventures in Science Using Art Laboratory), a recently launched educational outreach program of the Materials Research Science and Engineering Center on Polymers (MRSEC) at the University of Massachusetts Amherst…based on the premise that the visual arts can serve as an effective means to stimulate, educate and promote materials science research to the general public and to students of all ages. All of us engaged in scientific research are frequently, perhaps even daily, exposed to imagery that is not only breathtaking to behold, but contains fundamental information that is key to understanding specific phenomena or underlying scientific principles. VISUAL uses this imagery to provide a unique avenue by which an interest and appreciation of scientific research can be nurtured." Strzegowski invites inquiries regarding VISUAL at mrsec@polysci.umass.edu.

I'll close this article with the closing paragraph of Wilson's book: "Research is the search for the future. Science and art are major forces in contemporary society. They must both contribute to the shaping of that future."

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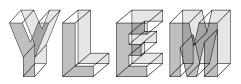
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# YLEM

*n. pronounced eylum, 1. a Greek word for the
exploding mass from which the universe emerged.*

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